What is claimed is:

1. A method of determining characteristics of an object in motion along series of sensors, said method comprising:

receiving signals from said sensors as said object passes by said sensors

and

processing signals to determine speed, direction, position and size of an object,

said signals characterized by a sequence of a rising edge, an on state, a falling edge and an off state,

where said series of sensors is in a substantially linear arrangement.

2. A system for determining position, speed, direction and size of an object in motion, comprising:

at least two sensors at fixed intervals between each other in at least one sensor arrangement;

at least one processor; and

at least one outcome device;

wherein

said at least two sensors sending input signals to said at least one processor;

said at least one processor analyzing input signals from pairs of adjacent said sensors from said at least one arrangement;

said at least one processor sending output signal to said at least one outcome device;

said at least one outcome device performing at least one action according to a set of predetermined rules.

3. A processor according to Claim 2, said processor receiving input signals from a series of at least two sensors set at a fixed distance relative to each other,

said processor capable of processing said input from pairs of said sensors,

said processor able to treat either sensor of each sensor pair as the first or second sensor of said pairs of sensors, analyzing said signals from said sensor pairs to sense objects in motion along said series of sensors.

4. A processor according to Claim 3, said processor analyzing state of input signals from said pairs of sensors to determine the directions, positions along said series of sensors, speeds, sizes, and numbers of said objects in motion,

said sizes of said objects being relative to said fixed distance between adjacent sensors.

5. A processor according to Claim 3, said processor sending output signals to at least one outcome device based on said directions, said positions, said speeds, said relative sizes, and said numbers of said objects in motion.

6. A method of determining properties of an object moving in a path, said path being monitored by a series of sensors, said method comprising:

receiving signals from said sensors as said object passes by each of said sensors,

processing said signals from pairs of adjacent sensors,

analyzing states of said signals with respect to time to determine speed, direction, position and size of said object,

each sensor acting simultaneously as the second sensor for a sensor pair and as the first sensor for the next sensor pair, except for the first and last sensor in said series of sensors,

where

said series of sensors is in a substantially linear arrangement.

7. A method according to Claim 6, said processing step further comprising:

analyzing signals from said pairs of adjacent sensors,

whereby

direction of object is forward

if

second sensor of each said sensor pair detects a rising edge state while first sensor of said sensor pair is in an on state, said second sensor remaining in on state until said first sensor returns to an off state,

said sequential pairs of sensors displaying this pattern of signals in said direction of objection;

where object has just cleared first sensor

and where width of object w is greater than interval between sensors d.

8. A method according to Claim 6, said processing step further comprises:

analyzing signals from said pairs of adjacent sensors,
whereby
direction of object is reverse
if
first sensor of each said sensor pair detects a rising edge state while second sensor of said sensor pair is in an on state,
said first sensor remaining in an on state until said second sensor returns to an off state,
said sequential pairs of adjacent sensors displaying this pattern of signals in said direction of object
where
object has just cleared second sensor
and where
width of object w is greater than interval between sensors d.

9. A system for determining size, position, speed and direction of an object in motion, comprising:

at least three sensors at fixed intervals between each other in at least one sensor arrangement;
at least one processor; and
at least one outcome device;

wherein

said at least three sensors sending input signals to said at least one processor;

said at least one processor analyzing input signals from triplets of three adjacent said sensors from said at least one sensor arrangement;

said at least one processor sending output signal to said at least one outcome device;

said at least one outcome device performing at least one action according to a set of predetermined rules.

10. A processor according to Claim 9, said processor receiving input signals from a series of at least three sensors set at a fixed distance relative to each other,
three adjacent said sensors forming a sensor triplet,
said processor capable of:
processing each sensor in said series of sensors as either the first, second or third sensor of said sensor triplets,
and
analyzing signals from said triplets of sensors to sense objects in motion along said series of sensors.

11. A processor according to Claim 10, said processor analyzing state of input signals from said triplets of sensors to determine the directions, positions along said series of sensors, speeds, sizes, and numbers of said objects in motion, said sizes of said objects being relative to said fixed distance between adjacent sensors.

12. A processor according to Claim 10, said processor sending output signals to at least one outcome device based on said directions,

said positions, said speeds, said relative sizes, and said numbers of said objects in motion.

13. A method of determining properties of an object moving in a path, said path being monitored by a series of sensors, said method comprising:

receiving signals from triplets of adjacent said sensors as said object passes by said sensors,

processing signals from said triplet of sensors,

analyzing states of said signals with respect to time to determine speed, direction, position and size of said object,

each sensor is simultaneously as the first, second or third sensor for said sensor triplets

where

said sensors may said series of sensors is in a substantially linear arrangement.

14. A method according to Claim 13, said processing step further comprises analyzing signals from said triplets of sensors, whereby

direction of said object is forward

if

first sensor senses object and before second sensor

and where

second sensor senses object before third senor of said triplet of sensors.

15. A method according to Claim 13, said processing step further comprises analyzing signals from said triplets of sensors, whereby

direction of said object is reverse

if

third sensor senses object before second sensor,

and where

second sensor senses object before first sensor of said triplet of sensors.

16. A method according to Claim 14, said processing step further comprises analyzing signals from said triplets of sensors, whereby

said object in motion in a forward direction,

object has just cleared second sensor

and

size of said object is greater than the interval between adjacent said sensors

but

less than twice the interval between adjacent said sensors,

when

first sensor signals an on state before second sensor signals an on state,

first sensor returns to an off state before third sensor signals a rising edge state

when

second sensor is in an on state,

said second sensor returning to an off state before said third sensor returns to an off state,

subsequent said triplets of sensors reiterating this pattern of signals in said direction of motion of said object.

17. A method according to Claim 14, said processing step further comprises analyzing signals from said triplets of sensors, whereby

said object in motion in a forward direction,

object has just cleared second sensor

and

size of said object is greater than twice the interval between adjacent said sensors,

when

first sensor signals an on state before second sensor signals an on state,

first sensor returns to an off state only after third sensor signals a rising edge state

when

second sensor is in an on state,

said second sensor returning to an off state before said third sensor returns to an off state,

subsequent said triplets of sensors reiterating this pattern of signals in said direction of motion of said object.

18. A method according to Claim 15, said processing step further comprises analyzing signals from said triplets of sensors, whereby

said object in motion in a reverse direction,
object has just cleared second sensor
and
size of said object is greater than the interval between adjacent said sensors
but
less than twice the interval between adjacent said sensors,
when
third sensor signals and on state before second sensor signals an on state,
third sensor returns to an off state before first sensor signals a rising edge state
when
second sensor is in an on state,
said second sensor returns to an off state before first sensor returns to an off state,
subsequent said triplets of sensors reiterating this pattern of signals in said direction of motion of said object.

19. A method according to Claim 15, said processing step further comprises analyzing signals from said triplets of sensors,
whereby
said object in motion in a reverse direction,
object has just cleared second sensor
and
size of said object is greater than twice the interval between said sensors,

when

third sensor signals an on state before second sensor signals an on state,

third sensor returns to an off state only after first sensor signals a rising edge state

when

second sensor is in an on state,

said second sensor returning to an off state before said first sensor returns to an off state,

subsequent said triplets of sensors reiterating this pattern of signals in said direction of motion of said object.

20. A processor receiving input signals from a series of at least five sensors set at a fixed distance relative to each other,

said processor capable of:

processing signals from a reference sensor and two or more neighboring sensors,

said neighboring sensors not immediately adjacent to said reference sensor,

analyzing signals from said sensors to sense an object in motion along said sensors

and

sending signals to at least one output device based on characteristics of motion of said object.

21. A system further to Claim 2, wherein said fixed interval between adjacent sensors may be from 16 to 30 cm.

22. A system further to Claim 9, wherein said fixed interval between adjacent sensors may be from 16 to 30 cm.